

Abstract

The invention relates to enzymes from the specific groups of calpain proteases, which take part in a plurality of metabolic processes, e.g. by acting
5 on the apoptosis, for certain cancerous diseases and during cell migration. The invention also relates to enzymes from the group of metalloproteases which develop, e.g. activities during fertilization, and take part in blood pressure regulation as ACEs and as collagenases in collagen metabolism. A potential need of such enzymes is mainly covered today by plant and animal
10 sources. Known organisms in which such proteases naturally occur exclusively come from warmer regions, such that a costly heat supply necessitating complex apparatus is required during the production thereof. Organisms comprising enzymes adapted to the cold are known however. The invention thus also relates to nucleic acid sequences coding for a calpain
15 7 protease and a zinc metallo protease, which originate from the marine diatoms *fragilariopsis cylindrus* adapted to the cold and correspond to SEQ ID No. 1, SEQ ID NO. 2 or functional variants or fragments having at least 8 nucleotides thereof.

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